

US 395 Deer Park Intersection Improvement Study

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Deer Park Council Meeting
City of Deer Park
May 4, 2016

Presentation Outline

- **Background Information, Purpose of Study & Safety Approach**
- **Existing Conditions**
- **What have we heard previous to this study?**
- **What did we hear from the Stakeholders Meeting, Community Meeting & Deer Park Chamber Meeting?**
- **Discussion on Intersection Alternative Options**
 - **Grade Separation, Traffic Signals, RIRO with R-Turns, Roundabouts, access revisions**
- **Recommended Alternative Conceptual Design**
- **Moving Forward**

Background Information

- In March 2003, WSDOT published a Route Development Plan for US 395 from MP 172 to MP 183.69. While it presented a long-term vision, it was not funded.
- Intersection-related collisions continue to occur in the Deer Park area.
- Recognizing that current asset needs are greater than the ability to fund them, WSDOT has increased efforts in the area of Least Cost Planning – the planning and development of solutions that meet objectives at the lowest possible cost.
- In the Deer Park area, this means that WSDOT is looking at smaller-scale sustainable improvements. This biennium, WSDOT Eastern Region received funding to develop proposals to address safety in the segment of US 395 from Burroughs/Dalton Road to Dahl Road.

What is the purpose of the study?

Identify intersection improvements to

- ✓ **Improve the safety performance of the corridor**
- ✓ **Reduce crashes**
- ✓ **Be supported by the public**

WSDOT will then submit the proposal(s) for design and construction funding.

Basis of study:

- ✓ **Crash Analysis**
- ✓ **Driver Behavior**
- ✓ **Contextual Needs**

Our Safety Approach

- Per Highway Safety Manual these intersections are performing at or above average:
 - Short/Main (well above, no potential safety)
 - Cleveland/H (small potential for safety improvement)
 - Dahl (no potential safety improvement)
- Per Highway Safety Manual these intersections are performing below average & have potential for safety improvement:
 - Monroe/Crawford
 - Burroughs/Dalton
- We use Crash Modification Factors in estimating the potential changes in crash frequency/severity due to installing a particular treatment.

What have we heard previous to this study?

Previous constituent response comments/requests:

- 19+ letters, emails and/or phone calls with the public
- Majority requested speed reduction (to better access US 395)
- SBLT at Short Rd
- Requests for traffic signals, right turn lanes, crosswalks
- More vegetation management
- Multiple vehicles at stop line as drivers wait to make various turning movements
- Intersection offset/skew
- Impatience when choosing a gap

Existing Conditions

Geometrics

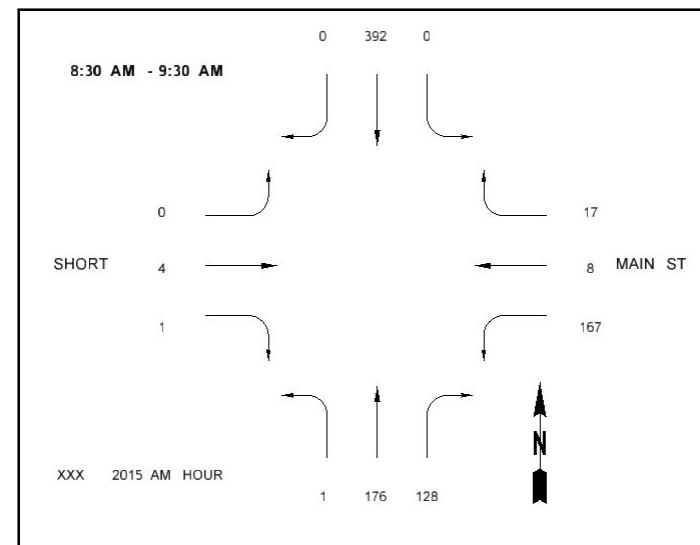
- Speed – 60 mph mainline, 25-45 mph on minor road
- Channelization – mainline typically has left turn lanes (not Short Rd) & right turn tapers
- Shoulders 8', 4' in channelization areas
- 11'-12' lanes
- Adequate sight distance (triangle) per Design Manual



Monroe Rd – Crawford St

Volumes

- 12,000 AADT south of Short Rd
- 10,000 AADT north of Short Rd
- AADT <1,000 west leg & <5,000 east leg
- Avg entering leg volumes < 200 vph
- 1% growth since year 2000



Short – Main St

Existing Conditions

Speed Limit

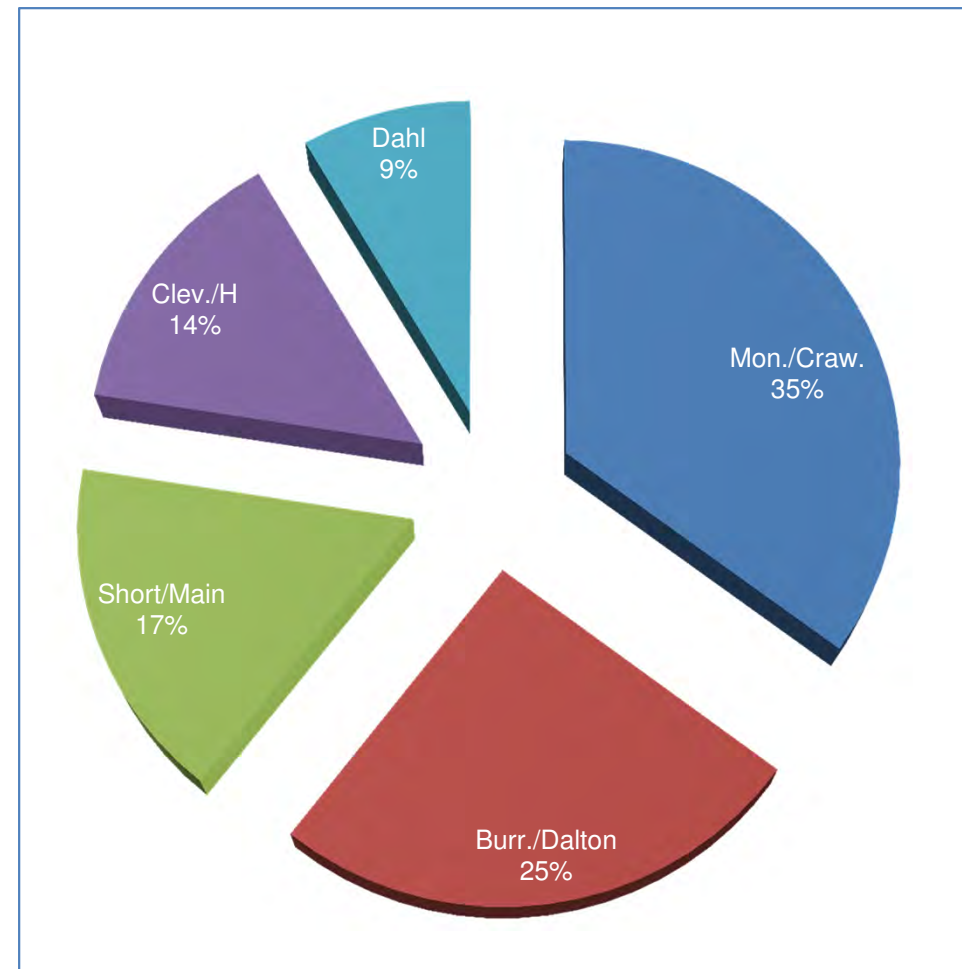
- Aligns with 85 percentile speeds
- 2014 study 62.3, 63.1 & 63.3 62.3 mph
- Speed not a factor in crashes except in snow/ice conditions

Crashes 2010-2014

- 65 “At Intersection & Related”
- 2 Fatal (Cleveland & Dahl)
- 18 Evident/Serious Injury
- 64% Entering at Angle

2015 ~ unofficial ~ 13 crashes with 8 at Monroe / Crawford.

Crashes per intersection



What did we hear from the Stakeholders Meeting?

February 16th Stakeholders Meeting Highlights:

- Heard from WSP, law enforcement, Maintenance, DP School District, City of DP, DP Chamber of Commerce, Spokane County
- Education key – e.g. left turning vehicle must yield to through vehicle (RCW)
- Keep access open for the businesses, school bus routes & emergency response
- SBLT at Short Rd ~ people still make illegal movement
- Driver behavior is effecting crash rates
- Understanding that speed limit is set according to driver expectancy
- Current sight obstructions – vegetation, guardrail & signs
- Vehicles park side by side at stop line – causing sight obstruction
- Intersection offset/skew

What did we hear from the March 1st Community Meeting?

Community Meeting Highlights:

- Approximately 200 people in attendance
- 45 minutes of one-on-one with public & 1 ½ hours of presentation / Q&A
- Captain Otis & Sherriff Dutton educated public on speed limits and how they are set
- Reminder to consider 10,000 ADT commuters who live north of Deer Park
- Burroughs/Dalton & Monroe/Crawford are the top intersections of concern

Main themes heard from Public:

- Lower the speed limit
- Signals / Roundabout
- Interchange
- Acceleration/deceleration lanes

US 395 Deer Park Community Meeting Public Comments								
	Accel/Decel Lanes	Traffic Signal	Roundabout	Over Crossing	Reduced Speed	Full Interchange with Frontage Roads	Jersey Barrier down centerline	TOTAL
Burroughs Rd /Dalton Rd	7	1	1	1	9			19
Short Rd /Main St	2	4		1	6	2		15
Cleveland Rd /H St				2	3			5
Monroe Rd /Crawford St	7	3		4	8		1	23
Dahl Rd	4	2	1		6			13
Generic Comment	2	2	1		4			9
TOTAL	22	12	3	7	36	2	1	83
Note ~ These are based on around 60 comment forms and study emails since the Community Meeting. Some people had multiple ideas.								

What did we hear from Deer Park Chamber Meeting?

March 15th Chamber Meeting Highlights:

- 2016 Eastern Region Regionwide Intersection Project
 - Based on community comments added candlesticks to limit side street vehicles two abreast (improve sight distance) & stop line location were possible.
- Heard observations, needs & concerns of public from March 1st Meeting.
- Looking at least cost planning alternatives @ up to \$5 million total project funds
- Ensured business owners Study Team is aware / becoming aware of conditions and driver behavior
- City interested in maintaining access



Intersection Alternative Option

Separated Grade Crossing

- Other intersections are not conducive for a grade separation crossing
 - Wetland mitigation



- Includes Right-in-Right-Out, centerline median barrier & Cleveland Rd cul-de-sac
- Steep grades (6-8%) & truck turning movement challenges
- \$7 Million Dollars = not a low-cost enhancement option & no other improvements



- Allows crossing US 395
- No turning movements
- Other access points closed
- \$3 Million Dollars

Intersection Alternative Option

Traffic Signals

Per Design Manual:

If signal warrants are met, evaluate multi-way stop, roundabout, and signal. If warrants are not met, evaluate yield, two-way stop, multi-way stop, and roundabout. Please note, the evaluation of a roundabout option is always required by resolution of the Multimodal Safety Executive Committee (MSEC). This evaluation requirement is based on the measured performance benefits of roundabouts.

Traffic Signal Warrants ~

Signal Warrants will be completed more thoroughly upon another field delay study.

What is Evident:

Burroughs/Dalton meets at least W1b.

Short/Main meets W1 & W2.

Cleveland/H likely will not meet a warrant.

Monroe/Crawford meets at least W1b.

Dahl does not meet a warrant.

“The single-lane roundabout is the preferred alternative. If selected, no comparison with other alternatives is required.”

Intersection Alternative Option

Right-In-Right-Out and R-Turns @
Burroughs/Dalton



- South end in the middle of a grade, between two guardrails
- North end will affect wetlands
- Negative effects to access ~ school buses & emergency response
- \$700,000 CN

Right-In-Right-Out and R-Turns @
Monroe/Crawford



- South end affects driveways
- North end in the middle of a grade & effects driveway
- Negative effects to access ~ school buses & emergency response
- \$700,000 CN

Intersection Alternative Option (3 Roundabouts)

Roundabout @ Burroughs/Dalton

Roundabout @ Short/Main

Do nothing @ Cleveland/H

Roundabout @ Monroe/Crawford

Do nothing at Dahl

- 3 Roundabouts
- Provides existing turning movements plus SBLT movement to Main St
- Roundabouts will reduce highway speed in the vicinity of the intersections (top public concern)
- \$ 4.6 Million (PE, CN, RW)



Intersection Alternative Option ~ 3 Roundabouts cont.

Roundabout @ Burroughs/Dalton



Estimate ~ \$1,700,000 (CN & RW)

Roundabout @ Short/Main



Estimate ~ \$1,300,000 (CN & RW)

Roundabout @ Monroe/Crawford



Estimate ~ \$1,200,000 (CN, within RW)

Do nothing @ Cleveland/H
(Skewed intersection)

Do nothing at Dahl Rd

Intersection Alternative Option (2 Roundabouts + RIRO)

Right-In-Right-Out @ Burroughs/Dalton
Roundabout @ Short/Main with Paving Short
Do nothing @ Cleveland/H
Roundabout @ Monroe/Crawford
Do nothing at Dahl

- Combination of Right-in-Right-Out and Roundabouts
- Rerouting turning movements from Burroughs/Dalton to Short/Main
- Roundabouts will reduce highway speed in the vicinity of the intersections (top public concern)
- Allows SBLT movement to Main St.
- \$ 3.5 Million Dollars



Intersection Alternative Option ~ 2 Roundabouts + RIRO cont.

Right-In-Right-Out @ Burroughs/Dalton



Approx. cost ~ \$300,000 (CN, within RW)

Roundabout @ Short/Main



Approx. cost ~ \$1,600,000 (CN & RW)

Paving Short Rd

- Existing base course
- 6" CSBC & 4" HMA
- Address slopes and 15 approaches
- Approx. cost ~ \$400,000

Do nothing @ Cleveland/H

Do nothing at Dahl Rd

Roundabout @ Monroe/Crawford



Approx. cost ~ \$1,200,000 (CN, within RW)

Intersection Alternative Option (2 Roundabouts + Closure)

Closure @ Burroughs/Dalton

Roundabout @ Short/Main with Paving Short

Do nothing @ Cleveland/H

Roundabout @ Monroe/Crawford

Do nothing at Dahl

- Combination of Closure and Roundabouts
- Rerouting turning movements from Burroughs/Dalton to Short/Main
- Reduces traffic on Dalton Rd that is a seasonal route & passes by a school
- Roundabouts will reduce highway speed in the vicinity of the intersections (top public concern)
- Allows SBLT movement to Main St.
- \$ 3.5 Million Dollars



Intersection Alternative Option ~ 2 Roundabouts + Closure cont.

Closure @ Burroughs/Dalton



Approx. cost ~ \$300,000 (CN, within RW)

Roundabout @ Short/Main



Approx. cost ~ \$1,600,000 (CN & RW)

Paving Short Rd

- Existing base course
- 6" CSBC & 4" HMA
- Address slopes and 15 approaches
- Approx. cost ~ \$400,000

Do nothing @ Cleveland/H

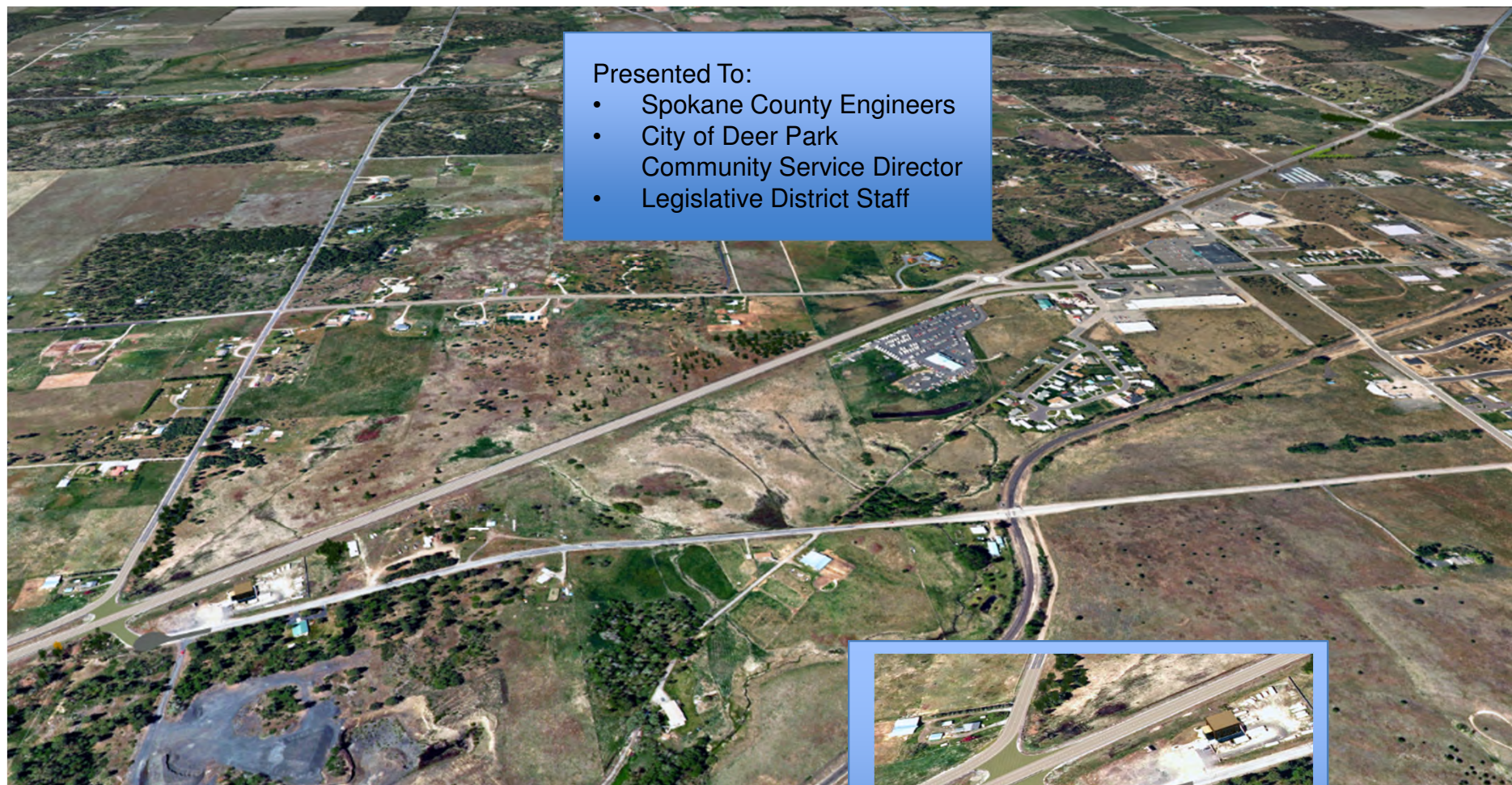
Do nothing at Dahl Rd

Roundabout @ Monroe/Crawford



Approx. cost ~ \$1,200,000 (CN, within RW)

Recommended Alternative Conceptual Design



Recommended Alternative Conceptual Design Short - Main

May 4, 2016, RDF



Looking
Northeast

Looking
Northwest



Recommended Alternative Conceptual Design Monroe - Crawford

4 May 2016, RDF

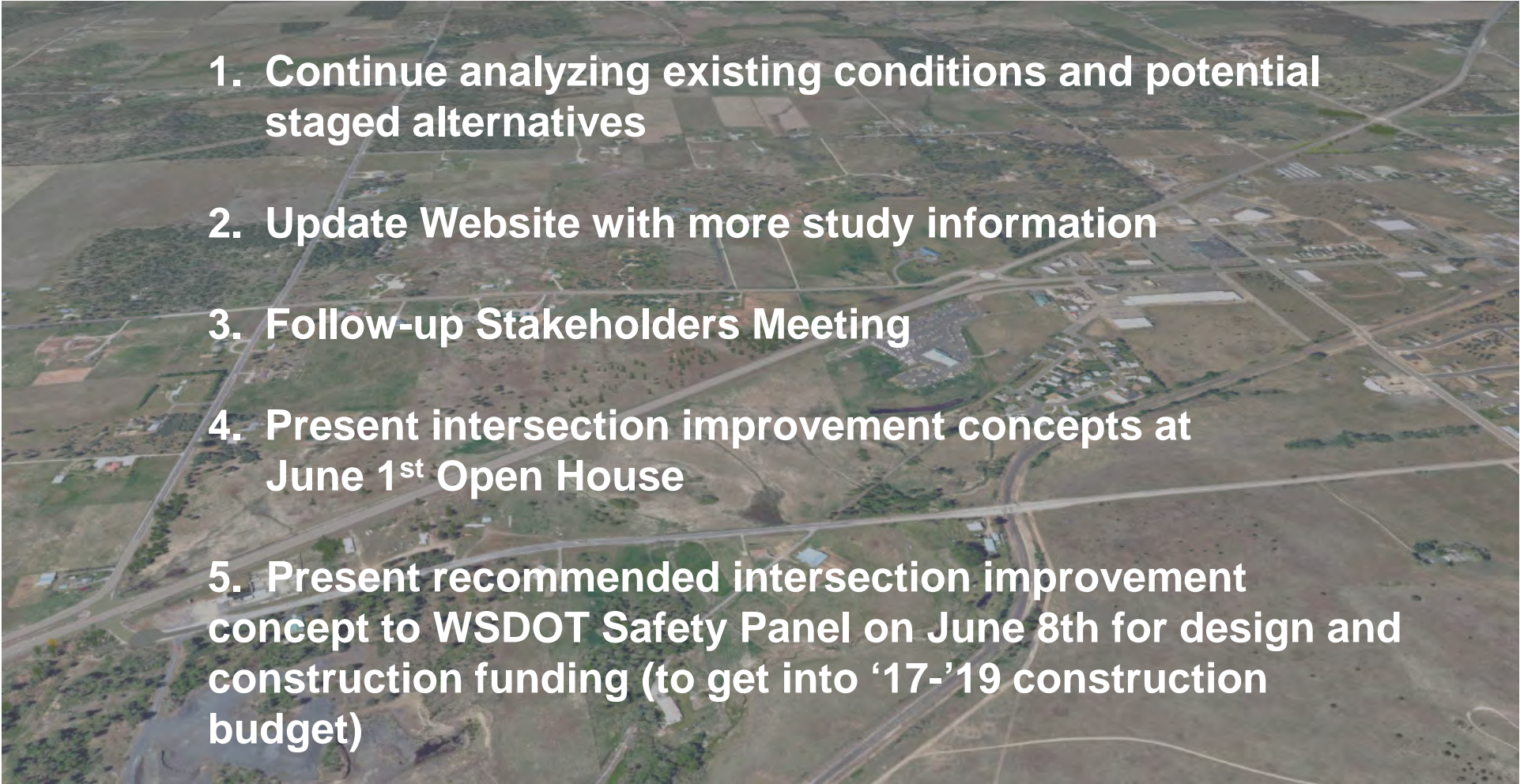


Looking East



Looking West

Moving Forward

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- An aerial photograph of a road intersection in a rural or semi-rural area. The image shows a multi-lane road crossing a two-lane road. There are some buildings and fields visible in the background. Overlaid on the image is a list of five action items.
1. Continue analyzing existing conditions and potential staged alternatives
 2. Update Website with more study information
 3. Follow-up Stakeholders Meeting
 4. Present intersection improvement concepts at June 1st Open House
 5. Present recommended intersection improvement concept to WSDOT Safety Panel on June 8th for design and construction funding (to get into '17-'19 construction budget)

Credits: US 395 Deer Park Intersection Improvement Study

Study Team

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